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**SUBCONTRACTING AS A SOLUTION
NOT A PROBLEM IN OUTSOURCING**

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13. ABSTRACT (Maximum 200 words) Potential savings may be achieved by the use of outsourcing, especially in the ADP area. However, in order to achieve those savings, considerable forethought needs to be taken in structuring the contract, in monitoring the contractor's performance, and in the administration and oversight of the contract. One of the ways that one could achieve additional savings through outsourcings would be to select the sub-contractors for specific areas of expertise. However, care needs to be taken in doing this, for there are both additional costs and time requirements involved with overseeing subcontractor performance. In addition, in order to mitigate some of the potential risks that have caused previous outsourcing efforts to fail, there are a number of measures that one can include in the contract to aid in meeting the goals and costs projected for the outsourcing: such as the use of performance criteria, and comparability measurements.					
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Contents

Executive Summary	v
Introduction	1
Subcontracting as a Solution Not a Problem	2
Performance Criteria	4
Comparability Measurements	5
Discussion	6
References	7
Interviews	8

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Executive Summary

As outsourcing has come into vogue for both commercial and government downsizing initiatives, the success or failure of the contracting efforts has increasingly been dependent on the effectiveness of the related subcontracting. Generally, when a company outsources a function, they have contracted with a single company to perform all the functions that a particular office previously performed. This has often led to considerable subcontracting to cover all the unique specialties involved in that area of responsibility. In turn, this has led to problems in both control over these particular subcontracted functions, and, in some cases, smaller cost savings than expected. Recently, several companies have started to act as their own prime contractor, wherein they select their own subcontractors. Initial results of these efforts indicate reduced costs and better customer satisfaction with the work performed have resulted. The downside to this, however, can be increased contract monitoring. Whether or not one uses this new approach, several measures can be included in the contract to improve the likelihood that the outsourcing will be successful in terms of cost savings and task performance. These measures, specifically performance and comparability measurements, can be used to monitor the contractor's performance, and/or to adjust the contract to reflect current pricing for performance.

Introduction

Over the last several years businesses have adopted a new management philosophy whereby the organization does not grow and prosper through acquisitions, but rather through partnering and networking. Part of this new mindset entails that the organization no longer needs direct line control over all of its components. Rather, components that are not part of the "core functionality" of the organization might be better performed by experts from those areas. This would reduce the overhead expenses of the organization, and improve the quality of the work product. This trend is similar to the trend in hardware manufacturing, where manufacturers no longer need to produce all the components of their products in house: rather they competitively procure components from outside the company to use in the manufacturing process.

As outsourcing has become more accepted, and more companies outsource whole functions, especially in the automatic data processing (ADP) area, subcontracting and how it is handled could have a significant impact on the success or failure of the outsourcing effort. This concern came to light in a Deloitte and Touche study, where, in a survey of 1,500 Chief Information Officers (CIO's) in the United States and Canada, they indicated that only 31 percent believed that their outsourcings generated significant cost savings, with 69 percent being disappointed in their outsourcing results (CIO White Paper, 1997). Basically, this survey showed that:

1. These executives believed that they would achieve savings through economies of scale and/or superior contractor resources; however, these expectations did not materialize, for the fixed price contracts they entered into did not subsequently pass along the hardware, software, and/or personnel savings over time. These experiences were also supported by Lacity and Hirschheim (1993), Lacity, Willcocks and Fitzgerald (1996), and Scheier (1997), who found that commercial contracts dealing with outsourcings have experienced problems with long term contracts similar to those previously mentioned. As such, the current trend has been to look at shorter time spans, so that changes in scope and productivity improvements can be reflected in the contract agreement; or, to frame the contract such that it is renegotiated at periodic intervals to adjust it to current market prices or changes in requirements.
2. The executives also complained that vendors were not up front about the amount of subcontracting that would be used for the execution of their contracts. This became a problem when the subcontractor was unfamiliar with the contract provisions and/or customer expectations, and did not deliver the required services in the expected way. This concern was also voiced in an INFO WORLD (1996) article, where many firms that had outsourced their information technology functions were starting to reduce the scope, or cancel parts of those efforts, because of lack of control over the vendors/subcontractors.

These results were similar to an earlier Gartner Group survey of 180 clients (1995) which found that for information technology outsourcings only about 37 percent of the outsourcings were viewed as being successful, either through improved performance (21 percent), or cost savings (16 percent); while the remainder of the respondents indicated either a mixed to too-early-to-tell response. Recent Gartner Group surveys have continued to show that gains from outsourcing have consistently fallen short of expectations by CIO's (Forbes Article, 1997). These surveys blamed the contracting process for not defining key issues and anticipated expectations. In the article, Gartner Vice President Mike Vargo said customers also do not realize that an outsourcing relationship takes more time and effort than they anticipated.

Subcontracting as a Solution Not a Problem

The above problems reflect what can happen when little thought is given to the outsourced function. In a perfect world, of course, it would be much easier to allow a prime contractor to manage the whole outsourced function, smoothing over difficulties and integrating the subcontractor's performance. However, what the above study results indicate are that the prime contractor may not always be good at performing those functions, or may not represent the least expensive approach. Two ways the customer might address these concerns are:

1. Undertake its own selection of subcontractors, and subsequent monitoring of their performance.
2. Place detailed monitoring measures and baselining provisions in the contract.

Selecting your own subcontractors as a way to save additional money on outsourcing has recently become a popular avenue for those companies willing to take on the responsibility. This process is similar to becoming your own general contractor in building a house, where one interviews and selects the different trade people required to perform the various construction tasks. Likewise, in information technology endeavors, multiple vendors are selected according to their areas of expertise. This was recently done by Halliburton Co., who found that specialized information technology vendors could provide optimal services, and do so at a cost savings of as much as 10 to 15 percent of what a prime contractor would cost (IW Article, 1995). They also mentioned that by breaking the outsourcing into pieces, they could see the value better "by getting a clearer picture of where the vendor was making its investments and profits." Other examples are Aetna, Eastman Kodak, DuPont, Zale's, and J.P. Morgan; all these companies wanted better service, and more control over their information technology (IW Article, 1996). Part of this trend, in breaking-out functions within an outsourced area, lays in the recognition that a single contractor is usually not able to perform all the functions required, and, in-turn, would have to subcontract some functions that were outside of its capability. An additional benefit of selecting your own subcontractor is that it allows for greater control over what is outsourced and what remains in house.

With the prospect of managing several subcontractors, some thought should be given as to how they will work together in functioning and dealing with one another; especially since some areas of responsibility will likely overlap. J.P. Morgan (IW Article, 1996; and Bell Atlantic, 1997), in their outsourcing effort, specified a risk/reward contracting procedure, that would provide positive and negative incentives for cooperation between the subcontractors. In this "reward" contract, savings achieved through better procedures and purchases would be put into a contingency pool, which would be shared between the company and the subcontractors. Likewise, if the subcontractors did not perform in accordance with the specified performance measurements, they would be penalized by some predetermined amount.

It should be mentioned though that the selection and monitoring of subcontractors can be a two-edged sword for while it affords the possibility of additional outsourcing savings, it may not come free either in terms of cost, or time required to manage the effort. In terms of cost, it could cost between 5 to 7 percent of the value of the contract to manage and oversee the subcontractors. That would cover renegotiating the contract agreements, resolving disputes, and tracking the contractor's performance (Scheier, 1996). These costs would vary depending upon the nature of the outsourcing, with the more flexible contracts requiring more contract oversight and subsequently a higher management cost. It should be pointed out, however, that these costs might be mitigated considerably if sufficient effort is spent on carefully defining in the contract how problems are to be resolved and how unexpected changes in requirements are to be addressed.

Another concern that should be considered in the contracting process is the degree of specificity in what is outsourced, and what specifically the contractor is supposed to perform. This is a fine line, for if the service levels are too tightly defined, the government could end up paying high fees for incremental projects outside the defined scope of the contract. For instance, companies have reported paying as much as 70 percent more than the original contract value for tasks outside of the defined scope of the contract (Lacity and Hirschhiem, 1993). Thus, there will be a trade-off for the government, to make the contracts as flexible as possible to cover a broad range of needs and changing requirements, without overburdening them with too much contract oversight. Lacity and Hirschhiem further point out that outsourcing does not seem to work well in the following areas:

1. Where a specific or unique knowledge of the business is required.
2. Where all services are custom.
3. Where the employee culture is too fragmented or hostile for the reorganization to come back together.

An additional consideration would be how the contract should be structured. For instance, the offeror's proposal should delineate what will happen to all of the existing

assets under consideration: which ones will the contractor assume responsibility for, which ones will remain with the Government, and which if any will go to third parties. In addition, one should also consider if there are any intellectual property issues, such as software licenses (i.e., whether existing software can be transferred to the outsourcer), and ownership of self-developed software.

Finally, a significant consideration to improve one's chances of having a successful outsourcing effort concerns the use of detailed monitoring measures and baselining provisions that should be included in the contract. For instance, there are a number of measures that one can include in the contract to aid in determining if the contractor is meeting the goals and costs projected for the outsourcing (Mylott, 1995; Rubin, 1997). These measures, can be grouped together under the headings of Performance Criteria and Comparability Measurements:

Performance Criteria

These measurements are those that can be used to emphasize areas that are considered critical, and/or can aid in the customer satisfaction process, by informing the contractor what specific expectations exist for the effort. In addition, these measures should link specific operations to strategic goals. For instance, many performance measurements are still tied to the old concepts of standard accounting that were developed back in the 1920's; the problem with this is that those types of measurements no longer represent the current work environment (Lynch and Cross, 1991; Drucker, 1988). This problem has also been recognized by many accountants, for in a survey at a meeting of the National Association of Accountants and Computer Aided Manufacturing-International, 60 percent of the financial officers expressed dissatisfaction with their current performance measures (Howell, Brown, Soucy and Seed, 1987).

For instance, performance measures that could be problematic are:

1. Purchase Price: may fail to look at quality and performance of the item.
2. Machine Utilization: subject to managers overrunning the machine to maximize utilization, which may not be warranted.
3. Cost Center Reporting: subject to managers focusing on centers and not activities, thus overlooking common activities.

Performance measures to consider:

1. Response time: specify an average or specific response time for maintenance on critical equipment or software.
2. System availability: specify that particular hardware and/or software is functional on a daily, by shift, or by application basis.

3. Downtime: specify that particular hardware and/or software be down less than a particular amount of time, or require a particular mean-time-between-failure (MTBF).
4. Turnaround time or schedule of performance: specify either a specific turnaround time on repairs, or a particular schedule of performance for equipments.
5. Performance reports: specify general performance criteria that are considered important to the outsourcing effort.
6. Penalties for nonperformance: penalties might also be used on some of the availability factors, to add emphasis for meeting the specific performance requirements.
7. Satisfactory performance statement: state the organization's expectations of the vendor. These need to be clearly defined and discussed with the vendor.
8. Build subcontractor approval rights into the contract: to aid in specifying what mission critical projects or systems are handled only by the primary vendor.

Comparability Measurements

For comparison, reports can be used to determine if the contract is relevant to similar costs for these services by other providers.

1. Operation's Cost Measures: specify that the contractor report cost in terms of CPU hours, storage costs, total cost per hour, fixed costs, and/or variable costs.
2. Communication's Cost Measures: specify that the contractor report cost per hour, by distance, per line, or per switch.
3. Service's Cost Measures: specify that the contractor report costs per person, or per application.
4. Value-based pricing and benchmarking: specify that the contractor periodically adjust the contract price to the "market price"; an alternative to this would be to negotiate rates annually.

These measures should be reported on a monthly basis, and consist of a mix of both performance and comparability measures, which would be used to determine the monthly payment for the contractors. On the basis of their performance, the contractor may receive either an incentive fee for exceeding certain performance perimeter bands, or a penalty for falling below those bands. Scheier (1997) also suggests that cost measures should be broken out for specific items, rather than bundling large areas together, to make it easier to pinpoint which prices should be renegotiated.

Discussion

In general, outsourcing has become a very popular vehicle in the commercial sector, with more and more companies and now government entities utilizing this form of obtaining services (Washington, 1997). To maximize the possible savings and achieve the desired performance improvement, considerable forethought is necessary in structuring the contract, in monitoring the contractor's performance, and in the administration and oversight of the contract. One of the ways that additional savings could be achieved in the outsourcing area would be through the selection and monitoring of the subcontractors for specific areas of expertise. Care needs to be taken in utilizing this means, however, for there are both additional costs and time requirements associated with the process.

To mitigate some of the potential risks with outsourcings due to problems with the contracting process, a number of performance measures should be included in the contract to aid in meeting its goals for both performance and cost. These measures would then be used in the contract administration process to make sure that the contract is on track, and also, perhaps, to control contractor payments.

References

CIO White Paper, "Uneasy Pieces, Number 5, part 2, Outsourcing," [Http://www.cio.com/](http://www.cio.com/) (5 May 1997).

Drucker, Peter F., The Coming of the new Organization, *Harvard Business Review*, January-February, 1988.

Forbes Article, Outsourcing to the Rescue, Magazine: A Supplement to *Forbes Magazine*, 22 September, 1997, Vol. 160, pp. 25-26.

Gartner Group Survey, Research Note, 10 April, 1995.

Howell, Robert A., Brown, James D., Soucy, Stephen R., and Seed, Allen H., Management Accounting in the New Manufacturing Environment, National Association of Accountants, Montvale, NJ, 1987. (Cited in Lynch and Cross, 1991, p. 4.)

IW Article, Outsourcing Megadeals, *Information Week*, Issue 552, 6 November, 1995, p. 34.

IW Article, The New Outsourcing Partnership, *Information Week*, Issue 585, 24 June, 1996, p. 50.

INFO WORLD Article, Managing Your Outsourcing, *INFO WORLD*, 9 September, 1996, pp. 77-78.

Lacity, Mary C., and Hirschhiem, Rudy, *Information Systems Outsourcing*, 1993.

Lacity, Mary C., Willcocks, L., and Fitzgerald, G., An empirical investigation of IT sourcing decisions: Lessons for best practice. Oxford Institute of Information Management Research and Discussion Paper, 1996.

Lynch, Richard L. and Cross, Kelvin F., Measure Up: Yardsticks for Continuous Improvement, 1991.

Mylott, Thomas R., *Computer Outsourcing, Managing the Transfer of Information Systems*, 1995.

Rubin, Howard A., Using Metrics for Outsourcing Oversight, *Information Systems Management*, Vol. 14, Spring 1997, pp. 7-15.

Scheier, Robert L., Outsourcing's fine print, *Computerworld*, 19 August, 1996, pp. 70.

Scheier, Robert L., Business outsourcing more but less thrilled with results, *Computerworld*, 21 July, 1997, p. 14.

Washington, W. N., Outsourcing Automatic Data Processing Requirements and Support, *Research and Development Technical Report*, U.S. Army Communications Electronics Command, Fort Monmouth, NJ, CECOM-TR-97-4, July, 1997 (ADA327808).

Interviews

Keefer, Scot, Director, Business Development, Bell Atlantic Network Integration, Inc., Frazer, PA, 7 August, 1997.

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